

Proposed Proposed New Alberta Reliability Standard PRC-002-AB-2, *Disturbance Monitoring and Reporting Requirements* (“new PRC-002-AB-2”)

Date of Request for Comment: <u>September 18, 2018</u> Period of Comment: <u>September 18, 2018</u> through <u>October 3, 2018</u> Comments From: <u>AltaLink Management Ltd.</u> Date [yyyy/mm/dd]: <u>October 3, 2018</u>	Contact: <u>Jenette Yearsley</u> Phone: <u>(403) 387-8275</u> Email: <u>jenette.yearsley@altalink.ca</u>
--	--

Listed below is the summary description of changes for the proposed new PRC-002-AB-2. Please refer back to the Consultation Letter under the “Attachments” section to view materials related to the proposed new PRC-002-AB-2”. Please place your comments/reasons for position underneath (if any).

Alberta Reliability Standard	Market Participant Comments and/or Alternative Proposal
<p>New</p> <p>The AESO is seeking comments from market participants with regard to the following matters:</p> <ol style="list-style-type: none"> 1. Are there any requirements contained in proposed new PRC-002-AB-2 that are not clearly articulated? If yes, please indicate the specific section of proposed new PRC-002-AB-2 , describe the concern and suggest alternative language. 2. Please provide any additional comments regarding proposed new PRC-002-AB-2. <p>R4 Each legal owner of a transmission facility, legal owner of a generating unit, and legal owner of an aggregated generating facility must have fault recording data as specified in requirement R3 that meets the following:</p> <p>R4.1 a single record or multiple records that include:</p> <p>(a) a pre-trigger record length of at least 2 cycles and a total record length of at least 30 cycles for the same trigger point, or</p> <p>(b) at least 2 cycles of the pre-trigger data, the first 3 cycles of the post-trigger data, and the final cycle of the fault as seen by the fault recorder;</p>	

R4.2 a minimum recording rate of 16 samples per cycle; and
R4.3 trigger settings for at least the following:
R4.3.1 neutral (residual) overcurrent; and
R4.3.2 phase under voltage or overcurrent.

R6 Each **legal owner** of a **transmission facility** must have dynamic **disturbance** recording data to determine the following electrical quantities for each **system element** on the **bulk electric system** it owns for which it received notification as identified in requirement R5:

- R6.1** one phase-to-neutral or positive sequence voltage;
- R6.2** the phase current for the same phase at the same voltage corresponding to the voltage in requirement R6.1, or the positive sequence current;
- R6.3** **real power** and **reactive power** flows expressed on a 3-phase basis corresponding to all circuits where current measurements are required; and
- R6.4** frequency of any one of the voltages in requirement R6.1.

R8 Each **legal owner** of a **transmission facility**, **legal owner** of a **generating unit**, and **legal owner** of an **aggregated generating facility** responsible for dynamic **disturbance** recording data for the **system elements** on the **bulk electric system** for which it received notification as identified in requirement R5 must have continuous data recording and storage, unless the equipment was installed prior to the effective date of this **reliability standard** and is not capable of continuous recording, in which case, triggered records must meet the following:

- R8.1** triggered record lengths of at least 3 minutes; or
- R8.2** at least one of the following 3 triggers:
 - (a) off nominal low frequency trigger set at < 59.55 Hz and off nominal high frequency trigger set at > 61.0 Hz;
 - (b) rate of change of frequency trigger set at < -0.05625 Hz/sec and > 0.125 Hz/sec; or
 - (c) undervoltage trigger set no lower than 85% of normal operating voltage for a duration of 5 seconds.

Comment # 1: Are requirement R4.3.1 and R4.3.2 applicable irrespective of the protection application? Some protection applications may not use overcurrent or phase under voltage functionality. In this case setting an overcurrent or phase under voltage trigger will cause planned switching to be recorded in addition to other system events. This could cause fault records to be overwritten.

Comment # 2: If requirements R4.3.1 and R4.3.2 are applicable irrespective of the protection application, what are the threshold/setpoints for these triggers?

Comment # 3: Altalink understands the R6 requirements should be recorded for 10 days, as defined in R11.1. Please confirm.

Comment # 4: Per ISO rules, section 502.9, the data from Altalink's Phasor Measurement Units (PMU) is streamed to the ISO. The PMU's data then is sent to Altalink Phasor Data Concentrator (PDC). Altalink understands that the current PMU's data satisfies the continuous dynamic data recording requirement of R8. Please confirm.

Comment # 5: Altalink understands the R8 requirements should be recorded for 10 days, as defined in R11.1. Please confirm.

Comment # 6: Please clarify whether the dynamic disturbance recording data storage subjected to R8 applies to the continuous data stream or to the disturbance records.

R11 Each **legal owner** of a **transmission facility**, **legal owner** of a **generating unit**, and **legal owner** of an **aggregated generating facility** must provide to the **ISO**, upon written request, all sequence of events recording and **fault** recording data for the **bulk electric system** buses identified in requirement R1 and dynamic **disturbance** recording data for the **system elements** on the **bulk electric system** identified in requirement R5, in accordance with the following:

R11.1 data is retrievable for the period of 10 **days**, inclusive of the **day** the data was recorded;

R11.2 data subject to requirement R11.1 is provided within 30 **days** of a request unless an extension is granted by the **ISO**;

R11.3 sequence of events recording data are provided in ASCII Comma Separated Value format following Appendix 3;

R11.4 **fault** recording and dynamic **disturbance** recording data are provided in electronic files that are formatted in conformance with C37.111, *IEEE Standard for Common Format for Transient Data Exchange (COMTRADE)*, revision C37.111-1999 or later; and

R11.5 data files will be named in conformance with C37.232, *IEEE Standard for Common Format for Naming Time Sequence Data Files (COMNAME)*, revision C37.232-2011 or later.

R11-A The **ISO** must provide to the **WECC** or the **NERC** upon written request, all sequence of events recording and **fault** recording data that the **ISO** subsequently receives, through making the same request of responsible entities in Alberta, in accordance with requirement R11, within 60 **days** of a request unless an extension is granted by the either the **WECC** or the **NERC**.

Appendix 1

Methodology for Selecting Bulk Electric System Buses for Capturing Sequence of Events Recording and Fault Recording Data (Requirement R1)

Step 2 Reduce the list to those **bulk electric system** buses that have a maximum available calculated 3-phase short circuit MVA of 1,500 MVA or greater. If there are no buses on the resulting list, proceed to Step 7.

**Appendix 2
Implementation Plan**

Effective Date

This **reliability standard** is effective on the first **day** 3 full calendar quarters after the date that it is approved by the **Commission**.

Implementation Plan for PRC-002-AB-2 Requirements R1 and R5:

Comment # 7: For R11.3. Please provide Appendix 3.

Comment # 8: The existing PMU data is being streamed per ISO rules-section 502.9, which is not in COMTRADE format. Does this meet the requirements of R11.4?

Comment # 9: In Appendix 1, step 2, please clarify the system operating conditions to be used to determine maximum 3 phase fault level (e.g. all generators on regardless of seasonal operation?)

Entities must be 100% compliant on the first **day** following 3 full calendar quarters after the date that the **reliability standard** is approved by the **Commission**.

Implementation Plan for PRC-002-AB-2 Requirements R2, R3, R4, R6, R7, R8, R9, R10, R11:

Entities must be at least 50% compliant within 4 calendar years of the effective date of PRC-002-AB-2 and 100% compliant within 6 calendar years of the effective date.

Entities that own only one identified **bulk electric system** bus, **system element** on the **bulk electric system** element, or **generating unit** must be 100% compliant within 6 calendar years of the effective date.

Entities must be 100% compliant with a re-evaluated list from requirements R1 or R5 within 3 calendar years following the notification by the **ISO** or the **legal owner** of a **transmission facility** that re-evaluated the list.

PRC-018-AB-1: Each **legal owner** of a **transmission facility**, **legal owner** of a **generating unit**, and **legal owner** of an **aggregated generating facility** must maintain documentation to demonstrate compliance with PRC-018- AB-1 until that entity meets the requirements of PRC-002-AB-2 in accordance with this Implementation Plan. **Reliability standard** PRC-018-AB-1 remains effective throughout the phased implementation period of PRC-002-AB-2 and is applicable to an entity's **disturbance** monitoring and reporting activities not yet transitioned to PRC-002-AB-2. PRC-018-AB-1 will be retired following full implementation of PRC002-AB-2 as noted below.

PRC-018-AB-1 Midnight of the day immediately prior to 6 years after the effective date of PRC-002-AB-2.

Comment # 10: In Appendix 2, AltaLink interprets the term of 50% compliant to refer to 50% of identified buses in R1 and identified system elements in R5. AltaLink would suggest the following revised wording:

Entities must be at least 50% compliant for identified buses in R1 and identified system elements in R5 within 4 calendar years of the effective date of PRC-002-AB-2, and 100% compliant within 6 calendar years of the effective date.

Comment # 11: Altalinks understands that, the disturbance monitoring equipment (PMUs) identified by AESO regarding PRC-018, should remain in service until the requirements detailed in the implementation plan of PRC-002 are met. Please confirm.

Comment # 12: (General Comment): Altalink understands that the current congifuration (mentioned in comment #4) satisfies the general intent of dynamic disturbance data recording requirements of PRC-002, please confirm. If the AESO's requirements are otherwise, AltaLink is concerned for the potential incremental costs due to substantial changes in configuration required.